CSE 481A Capstone Software Design: Operating Systems

Credits

5.0 (3 hrs lecture, 2 hrs+ meeting times)

Lead Instructor

Xi Wang

Textbook

- Hardware and Software Support for Virtualization, by Edouard Bugnion, Jason Nieh, and Dan Tsafrir

Course Description

Students work in substantial teams to design, implement, and release a software project involving multiple areas of the CSE curriculum. Emphasis is placed on the development process itself, rather than on the product. Teams are expected to develop a work plan, and to track and document their progress against it.

Prerequisites

CSE 332; CSE 351; either CSE 331 or 371.

ABET Outcomes
1. an ability to identify, formulate, and solve complex engineering problems by applying principles of engineering, science, and mathematics (H)
2. an ability to apply engineering design to produce solutions that meet specified needs with consideration of public health, safety, and welfare, as well as global, cultural, social, environmental, and economic factors (H)
3. an ability to communicate effectively with a range of audiences (H)

4. an ability to recognize ethical and professional responsibilities in engineering situations and make informed judgments, which must consider the impact of engineering solutions in global, economic, environmental, and societal contexts (H)
5. an ability to function effectively on a team whose members together provide leadership, create a collaborative and inclusive environment, establish goals, plan tasks, and meet objectives (H)
6. an ability to develop and conduct appropriate experimentation, analyze and interpret data, and use engineering judgement to draw conclusions (H)
7. an ability to acquire and apply new knowledge as needed, using appropriate learning strategies. (H)

Course Topics

CSE 481A is a capstone course on operating systems, with an emphasis on virtualization. In lectures we will introduce *lvisor*, a minimal x86 hypervisor based on KVM. We expect you to work on a project related to lvisor, finish exercises, discuss research papers, and make a presentation of your project at the end of the quarter